

# TRM-360 Technical Information

Motor Parameters		Symbols	Units	TML-360-035		TML-360-070		TML-360-140	
PERFORMANCE	DC Bus Voltage	$V_{DC}$	V	24	48	24	48	24	48
	Rated Torque	$T_r$	Nm	94.3		171.8		301.5	
	Peak Torque	$T_p$	Nm	150.5		297.8		600.5	
	Rated Speed	$N_r$	rpm	85	200	55	125	35	85
	No-Load Speed	$N_{no-load}$	rpm	125	250	75	155	50	100
	Torque Constant	$K_t$	Nm/A	2.2		3.53		5.29	
	Voltage Constant	$K_v$	V/rpm	0.185		0.302		0.452	
	Max. Cogging Torque	$T_{cog}$	%			<1			
	Torque Ripple	$T_{ripple}$	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			64		
Rated Current		$I_r$	$A_{rms}$	42.8		48.7		57	
Peak Current		$I_p$	$A_{rms}$	68.6		84.8		114	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.11 ( $\pm 20\%$ )		0.1 ( $\pm 20\%$ )		0.09 ( $\pm 20\%$ )	
Line Inductance		$L_{LL}@60Hz$	mH	0.44 ( $\pm 30\%$ )		0.56 ( $\pm 30\%$ )		0.59 ( $\pm 30\%$ )	
MECHANICAL & THERMAL	Stator Weight	$W_s$	kg	7.22		12.77		23.8	
	Rotor Weight	$W_r$	kg	4.40		8.81		17.64	
	Total Weight	$W_{total}$	kg	11.62		21.58		41.44	
	Mech. Time Constant	$K_{mech}$	ms	2.57		1.88		1.51	
	Thermal Resistance <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.189		0.146		0.115	
	Inertia	$J$	kg.m <sup>2</sup>	0.09193		0.18450		0.36966	
	Motor Constant	$K_m$	Nm/ $\sqrt{W}$	3.26	2.12	5.46	3.62	9.07	5.82
	Rotor ID		mm			270			
	Stator OD		mm			360			

Motor Parameters		Symbols	Units	TMH-360-035		TMH-360-070		TMH-360-140	
PERFORMANCE	DC Bus Voltage	$V_{DC}$	V	310	560	310	560	310	560
	Rated Torque	$T_r$	Nm	93.7		172.9		299.6	
	Peak Torque	$T_p$	Nm	316.6		632.8		1262.1	
	Rated Speed	$N_r$	rpm	230	440	185	350	140	270
	No-Load Speed	$N_{no-load}$	rpm	290	525	225	405	165	305
	Torque Constant	$K_t$	Nm/A	12.34		15.9		21.1	
	Voltage Constant	$K_v$	V/rpm	1.055		1.356		1.809	
	Max. Cogging Torque	$T_{cog}$	%			<1			
	Torque Ripple	$T_{ripple}$	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			64		
Rated Current		$I_r$	$A_{rms}$	7.6		10.9		14.2	
Peak Current		$I_p$	$A_{rms}$	27.5		42.7		63.9	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	3.38 ( $\pm 20\%$ )		2.1 ( $\pm 20\%$ )		1.54 ( $\pm 20\%$ )	
Line Inductance		$L_{LL}@60Hz$	mH	15.1 ( $\pm 30\%$ )		11.4 ( $\pm 30\%$ )		9.7 ( $\pm 30\%$ )	
MECHANICAL & THERMAL	Stator Weight	$W_s$	kg	7.39		12.87		24	
	Rotor Weight	$W_r$	kg	4.40		8.81		17.64	
	Total Weight	$W_{total}$	kg	11.79		21.68		41.64	
	Mech. Time Constant	$K_{mech}$	ms	2.50		1.88		1.56	
	Thermal Resistance <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.189		0.146		0.115	
	Inertia	$J$	kg.m <sup>2</sup>	0.09193		0.18450		0.36966	
	Motor Constant	$K_m$	Nm/ $\sqrt{W}$	1.97	1.43	2.99	2.17	4.52	3.26
	Rotor ID		mm			270			
	Stator OD		mm			360			

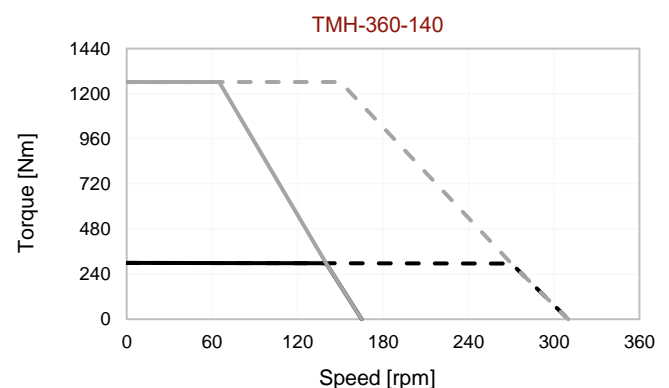
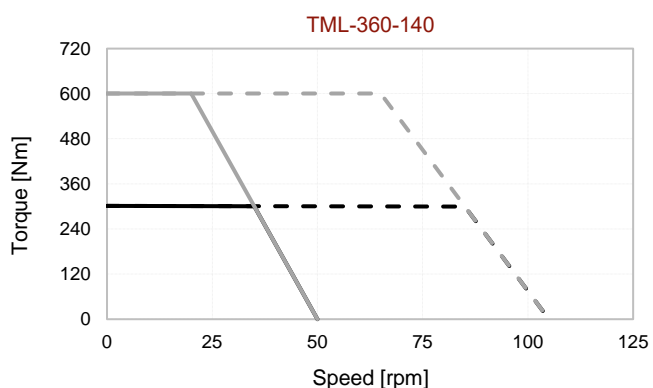
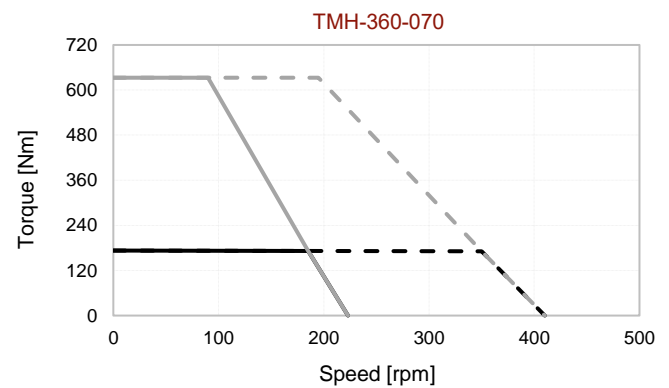
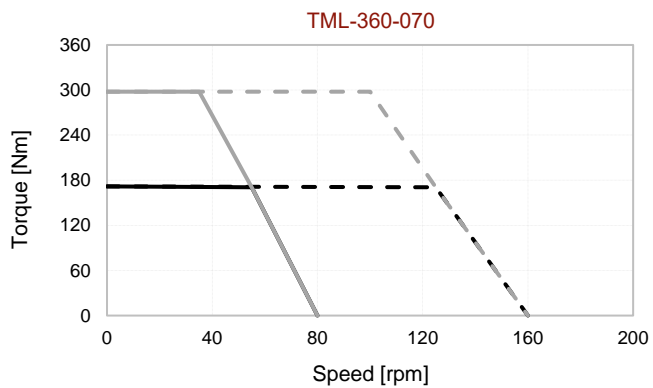
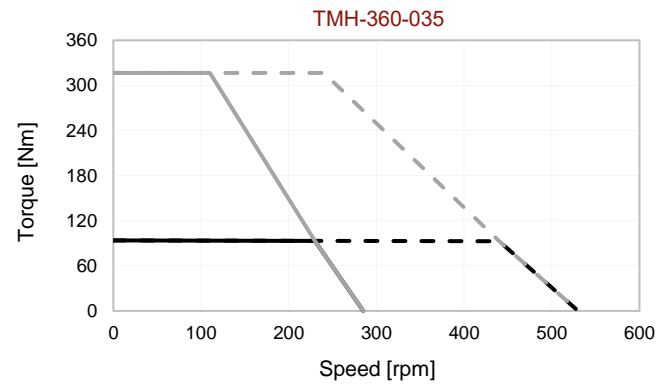
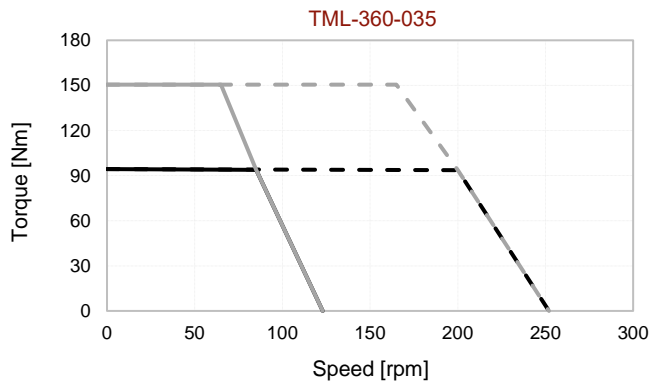
1. All performance and electrical specifications are obtained at 25°C ambient and may change  $\pm 10\%$ . 2. Housed version of motor mounted to 550 mm sq. x 20 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

# TM(L/H)-360 Torque-Speed Curves

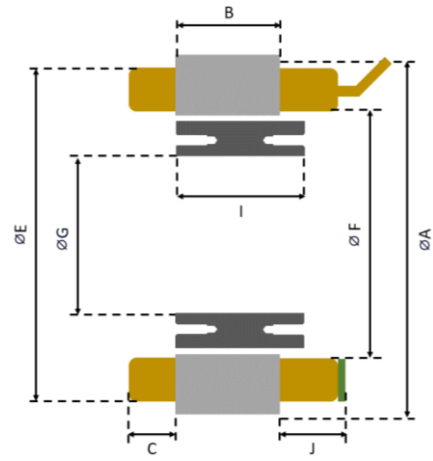
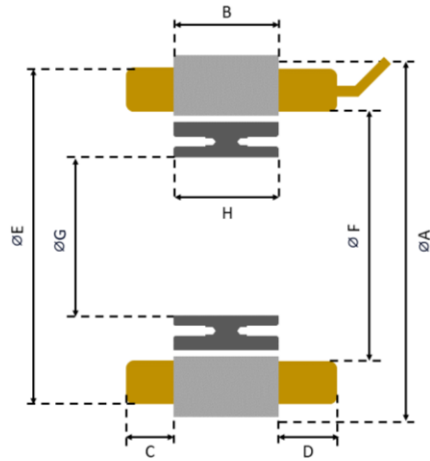
Tr: Rated Torque  
Tp: Peak Torque

— @Tr 24V    - - - @Tr 48V  
— @Tp 24V    - - - @Tp 48V

— @Tr 310V    - - - @Tr 560V  
— @Tp 310V    - - - @Tp 560V



# TM(L/H)-360 Outline Drawing



Hall Effect Sensor Option

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
TM(L/H)-360-035	360	35	16	18	352	312.4	270	35.1	40.1	21
TM(L/H)-360-070	360	70	16	18	352	312.4	270	70.2	75.2	21
TM(L/H)-360-140	360	140	16	18	352	312.4	270	140.4	145.4	21

## Notes:

### MOTOR LEADS:

360-TML: #6 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.  
 360-TMH: #10 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

### THERMISTOR LEADS:

#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue.

### SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

### MOUNTING OPTION:

#Stator: 3x3 Keyway  
 #Rotor: (16X on each side) M6 Bolt Hole (For details refer to MDS Motor mounting documents)